

### **REMARKS**

This Application has been carefully reviewed in light of the Office Action mailed May 24, 2004 (the "Office Action"). The Office Action rejects Claims 1-6, 8, 10-14, 16, 18-20 and 22 and objects to Claims 7, 9, 15, 17, 21 and 23. In order to advance prosecution of this application, Applicants amend Claims 7 and 15. Applicants respectfully request reconsideration and favorable action in this case in view of the comments set forth below.

### **Consideration of Information Disclosure Statements**

Applicants thank the Examiner for considering the references cited in the information disclosure statements (the "IDSs") filed October 20, 2000, November 17, 2000 and March 14, 2002 and for returning copies of the PTO Forms 1449 filed with the IDSs indicating consideration of the cited references.

### **Claim Objections**

The Office Action objects to Claims 7 and 15 because of particular "informalities" and proposes suggested revisions. *See* Office Action, page 2. Applicants have amended Claims 15 and 17 to recite "the second time slot," as suggested by the Examiner. However, Applicants disagree with the other proposed revisions. The claim elements "the second plurality of transport signals" and "the third plurality of transport signals" properly refer back to the elements "a second plurality of transport signals" and "a third plurality of transport signals" introduced in Claim 1. Applicants respectfully request withdrawal of the claim objections.

### **Section 112 Rejections**

The Office Action rejects Claims 1-23 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In particular, the Examiner contends that in Claims 1, 10, 18 and 19, it is not clearly stated what is meant by "switching the second plurality of transport signals at second level that is a more granular level than the first level." Applicants respectfully traverse this rejection.

Applicants respectfully submit that the claim element "switching the second plurality of transport signals at second level that is a more granular level than the first level" is not indefinite. This element's use in the Specification and claims is consistent with its meaning to one of ordinary skill in the art. For example, levels of switching are discussed in this manner in the Specification at least at pages 11-12 and 18-20. Moreover, as indicated in Exhibit A attached hereto, a technology dictionary defines "granular" as scalable in "small increments." See Newton's Telecom Dictionary, 18th Edition. Applicants also note that one of the cited references used in the rejections of the claims discusses switches of different granularities. Therefore, Applicants respectfully submit that this claim element is not indefinite in light of its use in the Specification and its meaning to one of ordinary skill in the art. See, e.g., M.P.E.P. § 2173.02.

### **Section 103 Rejections**

The Office Action rejects Claims 1, 3, 6, 10, 11, 12, 14, 18, 19, 20 and 22 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,324,185 B1 to Budhrajia ("*Budhrajia*") in view of U.S. Patent No. 6,041,055 to Chopping ("*Chopping*"). The Office Action rejects Claim 4 under 35 U.S.C. 103(a) as being unpatentable over *Budhrajia* in view of *Chopping* and further in view of U.S. Patent No. 6,324,185 B1 to Wiley et al. ("*Wiley*"). The Office Action rejects Claims 2, 5, 8, 13 and 16 under 35 U.S.C. 103 (a) as being unpatentable over *Budhrajia* in view of *Chopping* and further in view of U.S. Patent No. 5,159,595 to Flanagan et al. ("*Flanagan*"). Applicants respectfully traverse these rejections for the reasons discussed below.

In order to establish a prima facie case of obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. See *In re Royka*, 409 F.2d 981 (CCPA 1974).

Claims 1, 10 and 18 each recites a primary rate switch fabric operable to switch the first plurality of transport signals at a first level, a sub-rate switching fabric operable to switch the second plurality of transport signals at second level that is a more granular level than the first level and an asynchronous transfer mode switching fabric operable to switch

asynchronous transfer mode cells. The Office Action contends that a switching system 52 of *Budhraj* is "a switching complex," that a TDM switching subsystem 56 of *Budhraj* is "a subrate switching fabric" and that an ATM switching subsystem 54 of *Budhraj* is an "ATM switching fabric." Office Action, page 3. The Office Action also states that:

The TDM switching subsystem 56 and the ATM switching subsystem 54 receiving incoming traffic & perform switching of the incoming traffic for transferring to other component of network (receiving & switching TDM information and ATM cell for transmission to external network element) via line card interfaces 62 (interface card receiving incoming traffic). See col. 5, lines 15-25. The ATM switching subsystem 54 can be synchronous optical switching subsystem (see col. 2, lines 47-55). Therefore, it would have been obvious to add a synchronous transport switching in the switching subsystem 52 to receive & switch transport signal.

Office Action, page 3. Applicants note that the Office Action does not cite any portion of *Budhraj* as disclosing a primary rate switch fabric operable to switch the first plurality of transport signals at a first level.

In actuality, *Budhraj* discloses a switching system 52 that includes an ATM switching subsystem 54 and a TDM switching subsystem 56. See *Budhraj*, Figure 3. ATM switching subsystem 54 and TDM switching subsystem 56 are part of the illustrated main controller subsystem (MCS) 26 which is primarily responsible for providing switching and bandwidth management functions "to support the ATM/TDM cross-connection." *Id.*, col. 4, lines 43-46. In particular, ATM switching subsystem 54 and TDM switching subsystem 56 perform ATM/TDM cross-connection switching functions. See *id.*, col. 5, lines 15-17. Thus, while *Budhraj* discloses an ATM switching subsystem, it does not additionally disclose switch fabric operable to switch pluralities of transport signals at particular levels. More particularly, *Budhraj* does not disclose, teach or suggest a primary rate switch fabric operable to switch the first plurality of transport signals at a first level and a sub-rate switching fabric operable to switch the second plurality of transport signals at second level that is a more granular level than the first level. Thus, for at least these reasons, Applicants respectfully submit that Claims 1, 10 and 18 are patentable over the cited art used in the rejections and request that the rejections of Claims 1, 10 and 18 be withdrawn.

Moreover, the Office Action states that *Budhraj* "does not disclose TDM signal is more granular than the first signal level" but that *Chopping* "discloses, in Fig. 1, a switching fabric comprising two switches of different granularities, one is more granularity than the other." Office Action, page 3. The Office Action states "[t]herefore, it would have been obvious to one skill in the art to use the **Chopping's** granularity in order to switch TDM signals at the TDM switching subsystem 56 at more granular level than the Synchronous transport signal **et al.** so that TDM signals can be switched at a more granularity level than STS-1 level." *Id.* However, as Applicants noted above, *Budhraj* does not even disclose, teach or suggest switch fabric operable to switch pluralities of transport signals at particular levels. *Budhraj* merely discloses a TDM switching subsystem that performs ATM/TDM cross-connection switching functions. *See Budhraj*, col. 5, lines 16-17. Moreover, *Chopping* specifically states that it is directed to improving a switch fabric with two or more switches of different granularities:

Where a switch fabric has two or more switches of different granularities, they may be connected by a terminating device in which the higher granularity circuits from the first switch are terminated and demultiplexed into the lower granularity circuits for the second switch, in addition to the lower granularity circuits from the second switch being multiplexed together to form higher granularity circuits for the first switch.

*Chopping*, Abstract. Thus, *Chopping* is directed to improving a switch fabric with two or more switches of different granularities. *Budhraj* does not even disclose a switch fabric having two or more switches of different granularities. Thus, there is no motivation to combine *Chopping* with *Budhraj*.

Applicants note that the M.P.E.P. sets forth a strict legal standard for finding obviousness based on a combination of references. According to the M.P.E.P., "[o]bviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge [that was] generally available to one of ordinary skill in the art" at the time of the invention. M.P.E.P. § 2143.01. The "fact that references can be combined or modified does not render the resultant combination [or modification] obvious unless the prior art also suggests the desirability of the combination" or modification. *Id.* (emphasis in original).

The governing Federal Circuit case law makes this strict legal standard even more clear.<sup>1</sup> According to the Federal Circuit, "a showing of a suggestion, teaching, or motivation to combine . . . prior art references is an essential component of an obviousness holding." *In re Sang-Su Lee*, 277 F.3d 1338, 1343 (Fed. Cir. 2002) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25 (Fed. Cir. 2000)). "Evidence of a suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved." *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). However, the "range of sources available . . . does not diminish the requirement for actual evidence." *Id.* In *In re Dembiczak*, the Federal Circuit reversed a finding of obviousness by the Board of Patent Appeals and Interferences, explaining that proper evidence of a teaching, suggestion or motivation to combine is essential to avoid impermissible hindsight reconstruction of an applicant's invention:

Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999 (quoting *W.L. Gore & Assoc., Inv. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983)) (emphasis added) (citations omitted).<sup>2</sup> In the present case, the Examiner is improperly using the Applicants' disclosure as a blueprint for piecing together various elements of *Budhraj* and *Chopping*. Furthermore, the Examiner has merely stated that at the time the present invention was made, it would have been obvious for one of ordinary skill in the art to combine the teachings of *Budharaja* and *Chopping* "so that TDM signals can be switched at a more granularity level than STS-1 level." Office Action, page 3. However, there is no motivation cited in the art to make the proposed combination. This statement does

<sup>1</sup> Note M.P.E.P. 2145 X.C. ("The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references.").

<sup>2</sup> See also *In Re Jones*, 958 F.2d 347, 351 (Fed. Cir. 1992) ("Conspicuously missing from this record is any evidence, other than the PTO's speculation (if that can be called evidence) that one of ordinary skill in the

not satisfy the strict requirements for a motivation to combine set forth by the M.P.E.P. and the Federal Circuit. Moreover, Applicants note that even a determination that it would have been obvious to one of ordinary skill in the art at the time of the invention to try the proposed combination is not sufficient to establish obviousness. *See In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988).

Consequently, a *prima facie* case of obviousness cannot be maintained with respect to Claims 1, 10 and 18, as the Office Action has not show the requisite proof necessary to establish a suggestion or motivation to combine the cited references. Therefore, for at least this additional reason, Applicants respectfully request that the rejections of Claims 1, 10 and 18 be withdrawn.

Claims 2-6, 8, 11-14 and 16 each depends, either directly or indirectly, from at least one of Claims 1 and 10. Thus, for the reasons stated above with respect to Claims 1 and 10, Applicants respectfully submit that Claims 2-6, 8, 11-14 and 16 are patentable over the cited art used in the rejections and request allowance of Claims 2-6, 8, 11-14 and 16.

Moreover, the Office Action makes other general "it would have been obvious" statements with respect to rejections of claims other than the specific statements discussed above with respect to Claims 1, 10 and 18. *See, e.g.*, Office Action, page 5 (rejection of Claim 4 and rejections of Claims 2, 5, 8, 13 and 16). However, there is no motivation cited in the art to make the proposed combinations, and these statements do not satisfy the strict requirements for a motivation to combine set forth by the M.P.E.P. and the Federal Circuit. Consequently, a *prima facie* case of obviousness cannot be maintained with respect to Claims 2, 4-5, 8, 13 and 16, as the Office Action has not show the requisite proof necessary to establish a suggestion or motivation to combine the cited references. .

Claim 19 recites performing primary rate switching on a first transport signal comprising pass-through traffic requiring primary rate switching and performing sub-rate

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herbicidal art would have been motivated to make the modification of the prior art salts necessary to arrive at"

switching on a second transport signal comprising sub-rate traffic requiring sub-rate switching. As discussed above with respect to Claims 1, 10 and 18, *Budhraj* does not disclose, teach or suggest performing primary rate switching on traffic requiring primary rate switching and performing sub-rate switching on traffic requiring sub-rate switching. Thus, for at least these reasons, Applicants respectfully submit that Claim 19 is patentable over the cited art used in the rejection and request that the rejection of Claim 19 be withdrawn.

Claims 20 and 22 each depends from Claim 19. Thus, for the reasons stated above with respect to Claim 19, Applicants respectfully submit that Claims 20 and 22 are patentable over the cited art used in the rejection and request allowance of Claims 20 and 22.

**Allowable Subject Matter**

Applicants appreciate Examiner's indication that Claims 7, 9, 15, 17, 21 and 23 would be allowable if rewritten in independent form, including all the limitations of the base claim and any intervening claims. Applicants respectfully submit that Claims 7, 9, 15, 17, 21 and 23 are allowable as depending, either directly or indirectly, from allowable Claims 1, 10 and 19.

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the claimed invention.).

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**CONCLUSIONS**

Applicants have made an earnest attempt to place this case in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicants respectfully request full allowance of all pending claims.

If the present application is not allowed and/or if one or more of the rejections is maintained, Applicants hereby request a telephone conference with the Examiner and further request that the Examiner contact the undersigned attorney to schedule the telephone conference.

No fee is believed to be due. However, the Commissioner is hereby authorized to charge any fees to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,  
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Date: August 24, 2004

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## Exhibit A

# **NEWTON's TELECOM DICTIONARY**

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Published by CMP Books  
An imprint of CMP Media LLC.  
12 West 21 Street  
New York, NY 10010

ISBN Number 1-57820-104-7

February 2002

Eighteenth Edition

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1700 Fourth St., Berkeley, CA 94710

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Typically, at the point of network ingress, the carrier will discard any frames above the Be-Band and not very gracefully, I might add. See also Committed Burst Size, Committed Information Rate, Discard Eligible, Excess Burst Size, FRAD, Frame Relay, FRND, Measurement Interval, Offered Load, Permanent Virtual Circuit, and Router.

**Grade 1 Cable** Twisted pair cables specifically designed for analog voice circuits and data transmissions up to 1 Mbps. Applications — Key systems, analog and digital PBX, low speed data, RS-232, etc.

**Grade 2 Cable** Twisted pair cables designed to meet the IBM Type 3 specification. These cables are capable of data transmissions at 4 Mbps, IBM 3270, STAR-LAN I, IBM PC Network, ISDN, etc.

**Grade 3 Cable** Twisted pair grade 3 LAN cables have performance characteristics that permit data transmissions at 10 Mbps. Each have been tested to insure they meet the EIA/TIA 568 emerging standard. Applications — 802.3 10BASE-T at 10 Mbps, STARLAN 10 and 802.5 token ring at 4 Mbps.

**Grade 4 Cable** The highest quality twisted pair cables available. Super grade cables have been tested up to speeds of 20 Mbps, 802.5 token ring at 4 Mbps and 802.3 10BASE-T at 10 Mbps.

**Grade 5 Cable** These are the IBM-type individually shielded 2 pair twisted data cables. They're currently being tested for data rates at 100 Mbps. Applications — IBM Cabling System, 802.5 token ring at 16 Mbps and FDDI at 100 Mbps. Grade 5 cable is not the same as CAT 5 cable. See Category of Performance.

**Grade Of Service** GOS. A term associated with telephone service indicating the probability that a call attempted will receive a busy signal, expressed as a decimal fraction. Grade of service may be applied to the busy hour or to some other specified period. A P.01 Grade of Service means the user has a 1% chance of reaching a busy signal. See Traffic Engineering.

**Graded-Index Fiber** Graded-index fiber is a type of MultiMode Fiber (MMF) optical cable that is improved over earlier step-index fiber. Graded-index fiber has a thinner inner core and a gradual, rather than an abrupt, change in refractive index between the core and the cladding. The change in refractive index supports higher speed signal propagation for errant light pulses. The gradual change in the refractive index takes into account the fact the different light pulses travel in different modes (i.e., physical paths), some of which are longer than others. Both the smaller diameter of the inner core and the gradual change in refractive index make graded-index fiber much better at overcoming modal dispersion. As graded-index fiber can support transmission at 100 Mbps over distances of 2km or so, it is widely used in LAN backbones to interconnect high speed switches, routers, servers, etc. See also Modal Dispersion, MMF, Refractive Index and Step-Index Fiber.

**Gradient** In graphics, having an area smoothly blend from one color to another, or from black to white, or vice versa. See Gradient Fill.

**Gradient Fill** A computer imaging term. A fill composed of a smooth blend from a starting color to an ending color. There are many variations on this theme. Most programs let you apply textures, and others have "smart" gradient fill routines that lend a three-dimensional appearance.

**Gadium Glass** Gadium glass is capable of reducing optical aberrations inherent in conventional lenses and performing, with a single lens, tasks traditionally performed by multi-element conventional lens systems. By reducing optical aberrations and the number of lenses in an optical system, Gadium glass may provide more efficient light transmission and greater brightness, lower production costs, and a simpler, smaller product. Gadium glass is used in collimation in fiber optics. See Collimation.

**Grand Alliance** Also known as HDTV Grand Alliance. Comprises AT&T, General Instrument Corporation, Massachusetts Institute of Technology, Philips Electronics North America Corporation, Thomson Consumer Electronics, The David Sarnoff Research Center, and Zenith Electronics Corporation. These organizations had developed and promoted competing digital standards for HDTV. In May 1993, and under pressure from the FCC, they joined together in a "Grand Alliance" to develop a final digital standard for HDTV, which then became known as ATV (Advanced TV). The resulting single standard was documented in the ATSC (Advanced Television Systems Committee) DTV (Digital TV) Standard, which was accepted in large part by the FCC in December 1996. See ATV and HDTV.

**Grand Pooh-Bah** See GPB.

**Grandfather Clause** See Grandfathered.

**Grandfather Tape** The first backup of a program or a data record, saved so that you can always go back to step one if something goes wrong.

**Grandfathered** Something that has a right to be a thing or own a thing by reason

of it being or owning that thing before laws or rules were introduced to formalize the process. The derivation of term goes back to the Civil War. Grandfathering was a provision in several southern state constitutions designed to enfranchise poor whites and disfranchise blacks by waiving voting requirements for descendants of men who voted before 1867. The word derives from a "grandfather clause." Grandfather clauses stated that the right to vote was only available to those Americans whose grandfathers had been eligible to vote. These clauses were used, primarily in the South, to discriminate against blacks and immigrants shortly after Lincoln's issuance of the Emancipation Proclamation and congressional ratification of the Fourteenth Amendment. As a result, "grandfather" has come to mean something allowable because it was allowable before prohibitive legislation. See also Grandfathered Equipment.

**Grandfathered Equipment** Non-FCC registered telephone equipment that was directly connected to the telecommunications network without a phone company-provided protective connecting arrangement (PCA) prior to the formalized FCC registration program. See Grandfathered.

**Grandparents** The people who think your children are wonderful even though they're sure you're not raising them right.

**Granularity** 1. Microsoft Corporation jargon for complexity. For example, when you "achieve granularity," you grasp the complexity of the issue or problem.

2. Scalable in the most agreeable terms. A granular technology is scalable in very small increments, like grains of sand. In other words, it can be upscaled in small increments, matching the small, incremental requirements of the user while avoiding disproportionately large increases in cost. It's an overused, overly optimistic, and misleading term which finds its application primarily in sales presentations and brochures. See Brochureware.

**Graphic Character** A character, other than a character representing a control function (like Ctrl G being; in WordStar and dBASE nomenclature, to delete the character on the right) that has a visual representation normally handwritten, printed, or displayed, and that has a coded representation consisting of one or more bit combinations.

**Graphic Equalizer** A device which adjusts the tone by changing specific frequencies. The tone control on a radio is a type of equalizer. A radio transmitter may amplify low-end signals better than high-end signals. An equalizer can reduce or increase the amplification of the broadcast for an even and accurate reproduction of the input.

**Graphic Violator** Picture the home page of a typical Web site. Somewhere on the page is a moving graphic — perhaps an animated GIF

— that screams at you and violates the visual integrity and consistency of the page. Most often, such graphic is designed to deliberately violate the integrity of the page. It is often a paid-for advertisement. And the advertiser wants to draw your attention to his graphic ad. After all, he paid big money for the ad.

**Graphical Browser** A graphical browser is another, more commonly used, term for a World Wide Web (WWW) client program. A graphical browser can display inline graphics and allows the user to choose hyperlinks to move between hypertext documents. All browsers are graphical these days. The two leading browsers are Netscape and Microsoft Internet Explorer.

**Graphical User Interface** GUI. A fancy name probably originated by Microsoft which lets users get into and out of programs and manipulate the commands in those programs by using a pointing device (often a mouse). Microsoft's own definition is more elaborate. Namely that GUI puts visual metaphor that uses icons representing actual desktop objects that the user can access and manipulate with a pointing device.

**Graphics Coprocessor** A programmable chip that speeds video performance by carrying out graphics processing independently of the computer's CPU. Among the coprocessor's common abilities are drawing graphics primitives and converting vectors to bitmaps.

**Graphics Engine** The print component that provides WYSIWYG (What You See Is What You Get) support across devices.

**Graphics File** In terms of the World Wide Web (WWW), a graphics file is a file in graphics format that can be retrieved through a Web browser. The Web browser may need an add-on or file viewer in order to be able to display the file.

**Graphics Interchange Format** Graphics Interchange Format (GIF) is pronounced "Jiff." GIF is a format for encoding images (pictures, drawings, etc.) into bits so that a computer can "read" the GIF file and throw the picture up on a computer screen. The advantage of GIF files of images is that they're small, i.e. few bytes. It is a format for encoding images (pictures, drawings, logos, etc.) into bits so that a computer can "read" the GIF file and display the picture up on a computer screen. GIF can only handle 256 col-

